9.0 **Possible Mitigation Measures**

The potential for wildfires is likely to continue to increase because of the continuous fuel bed that is being allowed to develop within and adjacent to the subdivisions and scattered developed land parcels. Presently there is no effort by the County, State, or Federal land managers, or homeowners to reduce fuel loads; instead there has been active resistance by some homeowners to reduce fuel loads; instead there has been active resistance by some homeowners to change the "natural" vegetative conditions that exist on both Federal and private lands.

A variety of actions are needed to address the conditions in the assessment area. These have been split into two categories, general and specific, and are listed below.

9.1 General Actions

- Inform homeowners and Fire Department personnel about Firewise standards and practices.
- Encourage seasonal maintenance of vegetation around structures, propane tanks, and along access roads.
- Develop survivable space guidelines for homeowners based on vegetation and slopes.
- Control vegetation and maintain defensible space around structures; for most of the developing subdivisions, watering and mowing of the grass periodically during the growing season will provide a cheap and easy method to achieve this. Removal or reduction of the sagebrush will be easily accomplished by proper applications of herbicides or grubbing out of the individual plants, however the mountain shrubs reproduce by sprouts as well as by seed and mechanical removal of the crowns and roots would be needed to reduce or control the shrub cover. The mountain shrubs present provide browse for moose, deer, and elk, as well as cover for small mammals and birds. In areas where trees are present, a combination of pruning and removal will be required to develop Firewise spacing.
- Landowners and fire managers need to be aware of the vegetation types present on the landscape.
- Where desirable vegetation exists, it should be maintained through proper management practices.
- Activities which open an area to establishment of unwanted vegetation need to be mitigated. Most mitigation would involve re-establishment of desirable perennial grasses.
- Re-seeding attempts should be monitored and re-seeded until establishment of desirable vegetation has been achieved.
- Risk assessments by site should include an analysis of vegetation types.
- Project plans may want to include fire breaks (strip of fire resistant vegetation) to protect areas determined to be at high risk.

9.2 Specific Actions

- Undertake fuel modification efforts within the subdivisions on the individual lots, along access roads, and driveways for maximum effectiveness. Establishing and maintaining a cleared area the width of the road right-of-way along all common roads within the subdivision will provide safe ingress or egress for residents, visitors, and emergency personnel, as well as providing a fuel break. This will mean the removal of all encroaching shrubs and over hanging tree branches.
- Practice Firewise landscaping within each lot. A defensive zone can easily be established in many cases by removing the shrubs near structures and maintaining a green, mowed lawn during the growing season. If shrubs are to be retained as part of the landscape they should be isolated as individual plants or as small clumps.
- Remove all dead wood from both the mountain shrubs and trees that may be present to reduce their flammability. Dead woody material should be removed from the lot/subdivision to a disposal area. All conifer trees should be pruned up to 1/3 rd of their height (i.e. , remove ladder fuels 5-8 feet up from the ground). This should decrease the potential for surface fire to move into the tree crowns.
- Develop a cooperative program along subdivision boundaries where fuel is continuous with adjacent heavy fuel on Federal or State land the decrease the risk of fire moving between ownerships. In some cases a simple mowing/rotator-beating project may be all that is required. In conifer stands, however, a more costly shaded fuel break will be dictated. Periodic maintenance of this fuel break will be necessary to prolong its usefulness.
- Develop additional water sources as subdivisions build out to near capacity. The subdivisions and County should address this need to ensure enough water is stored for fire suppression. This may be as simple as developing a dry well system in some parts of the county with at least one large storage facility for the area.
- Obtain additional firefighting equipment to meet suppression needs. At least one 2-ton engine is presently needed at Fish Haven and a 3500 gallon tender will be needed to provide adequate water for suppression of wildfires in the interface areas.
- Obtain and house a quick response unit near the subdivisions on the east side of Bear Lake.
- Contract on a seasonal basis a tractor with mowing and disking capability for the grassland area north of State Highway 36 and US 89 to contain grass fires and protect housing being built.
- Develop public programs that will reach the seasonal residents of the county subdivisions and parcel developers in order for a lot-by-lot fuel reduction program to be most effective. Firewise trained summer seasonal personnel

could be very effective in making the contacts and in assisting in development of fuel modification plans for homeowners.

- Develop additional north/south roadways that connect the main subdivsions along the west side of Bear Lake.
- Upgrade Fish Haven Canyon Road to county standards.
- Provide dispatch with GIS software and map all roads and fire hydrants within the county.

Proposed Projects and Priority

The Proposed actions are based on the major change in use of the area that has resulted in an increasing number of residences being constructed in areas containing or adjacent to wildland fuels. The area has historically been grazed by both domestic stock and various species of wildlife, which has served to harvest a portion of the vegetation as forage or browse thus reducing the risk of fire. Since grazing of stock has been reduced the amount of grass and forbs remaining on the land has increased each year. The resultant vigorous grass stand has resulted in not only an increase in the volume of grass produced it has also resulted in a build up of the amount of litter remaining in the stands. The proposed actions will not only reduce the amount of dead fuel created by the grass stands, but will also remove the dead material being produced by the aging brush stands. By pruning and thinning the tree stands dead fuel in the canopies will be removed and the tree crowns will be more widely spaced thus decreasing the risk of wildfire moving from the surface fuels into aerial fuels and moving aerially from crown to crown.

There is a need by all agencies with jurisdiction in and adjacent to the assessment area to be actively involved in a public outreach program. Without the full understanding by the general public of the hazards and risks they are facing little of the needed fuel reduction will be under taken by residents within the subdivisions or be allowed to occur along adjacent agency boundaries. Resistance to any change from “natural” conditions will be very high among the vacation population without good communications between residents and agency personnel.

There are no known plans in effect that provide for implementation of the proposed actions. Resources currently in place are sufficient to control or suppress a small number of wildland and/or structural fires, but would likely be insufficient to control a large fire involving both structures and wildland fuels without Federal assistance.

It appears that there is a need to upgrade water systems within the subdivisions and further develop adjacent water sources to improve fire suppression capabilities dependent upon reliable water sources from a combination of wet and dry wells or constructed large cisterns.

An equally high priority should be given to obtaining an additional fire engine and water tender and installing foam units and water storage tanks with water sources as a lack of field water sources requires hauling water long distances to support fire suppression efforts.

The following proposed actions are listed by priority and should be addressed in the immediate future. These actions are based on needs of the volunteer fire chief and priorities outlined during meetings with the group:

1. Initiate fuels reduction in the interface region between the Bear Lake West subdivisions and the Forest Service Boundary. Other reduction areas include the Bear Lake Ranchettes area.
2. Purchase and construction of a two ton, 4x4 fire engine for Fish Haven; approximate cost under $70,000 for finished engine.
3. Purchase and construction of 3500 gallon water tender for Ovid; approximate cost under $50,000 for finished tender.
4. Purchase and installation of two foam units on existing attack engines; approximate cost under $3000 for each engine.
5. Purchase material and construction of a 10,000 gallon water storage tank for wildfire suppression in Bear Lake Ranchette and Geneva area; approximate cost $50,000.
6. Develop a county-wide fire plan that includes a standard set of enforceable fire codes.
7. Educate a county cadre that could do 'Red Zone' home surveys; develop a system recording data collected for use by both Fire Department personnel, dispatch and the office of the County Planner.
8. Develop an outreach program that will inform seasonal residents of subdivisions or parcels of the existing fuel hazards and risk of wildland fires.
9. Assist homeowners to develop a fuel reduction plan based on Firewise standards that will assist in protecting structures.
10. Develop a plan for maintaining clearing along county, subdivision and parcel access roads to insure safe ingress and egress of residents and fire fighting equipment.
11. Develop a schedule for rotator-beating and mowing rights of ways to reduce fuel along roads each spring/summer.
12. Develop a plan for construction of fuel break along federal and state boundaries that will provide for lower fuel loadings in the grass and shrub stands and shade fuel breaks in the areas in conifers, aspen, and cottonwood.

Mitigation of fire risk involves further action that need to be addressed in the future. The actions identified in this list and should be addressed in the next five years.

1. Provide GIS software to dispatch to enable use of "Red Zone" surveys
2. Incorporate fire code into local land use ordinances
3. Development of county-wide emergency evacuation plan
4. Improve fire fighting capacity at recreational subdivisions through awareness, education and equipment
5. Develop memorandums of understanding with Federal, State and Local Fire Agencies describing roles and involvement.

The above actions require the involvement of all homeowners as well as the County, State and Federal land managers. It is apparent that without the financial aid of the Federal government little of the proposed actions are likely to happen in the near future. Furthermore, actual placement of specific projects will depend on further study by local managers and completion of environmental documents. The most critical areas for fuels treatment activities are discussed below.

Discussion